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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AMORES, KAREN J

ART UNIT

PAPER NUMBER

3616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,540	Applicant(s) LEBLANC ET AL.	
	Examiner KAREN JANE J. AMORES	Art Unit 3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 10-16, 19, 21, 24, 26, 35, 36 and 46-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-16, 19, 21, 24, 26, 35, 36 and 46-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgements

1. Acknowledgment is made of Applicant's Request for Continued Examination filed on 12 April 2010.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1 – 6, 10 – 16, 19, 21, 24, 26, 35, 26, and 46 – 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 1 recites the limitation "an input shaft" in line 7 and again in line 11. It is unclear whether the second recitation of an input shaft is the same as the first input shaft or whether it is introducing a new input shaft. Appropriate correction is required.
5. Claim 1 recites the limitation "a pair of laterally projecting half shafts" in line 9 and again in line 12. It is unclear whether the second recitation of the pair of laterally projecting half shafts in is the same as the first pair of laterally projecting half shafts or whether it is introducing a new laterally projecting half shaft. Appropriate correction is required.
6. Similarly, claims 24, 35, 46, and 47 have indefinite recitations of repeating limitations. Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1 – 3, 14, 15, 24, 26, 35, 36, and 46, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Wohlfarth, U.S. 4,823,897 ("Wohlfarth"). Wohlfarth discloses a power plant (fig. 4) and driveline arrangement for a vehicle (column 1, line 7) having at least two wheel units and a body (fig. 4) supported on said wheel units comprising:

9. a longitudinally aligned engine (24) supported on said body;

10. a transmission (30 of axle 16) supported on said body disposed directly on the underside of said engine;

11. a first means (26) for transferring drive downwardly from an output shaft of said engine (24) to an input shaft of said transmission (32);

12. a second means (30 and/or 48) for transferring drive from an output shaft of said transmission (32) to forwardly and rearward projecting output shafts;

13. a first wheel carrier (axles 10) supported on said body forwardly of said second drive transferring means, having an input shaft (45 or 54) drivingly coupled to said forwardly projecting output shaft of said second drive transferring means, and a pair of laterally projecting half shafts (14 or 16) operatively connected to the wheels of a first wheel unit (10); and

14. a second wheel carrier (12) supported on said body rearward of said second drive transferring means, having an input shaft (56 or 58) drivingly coupled to said rearward projecting output shaft of said second drive transferring means, and a pair of laterally

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projecting half shafts (18 or 20) operatively connected to the wheels of a second wheel unit (12).

15. In reference to claims 2, 3, 14, and 15, Wohlfarth further discloses a third means (28) for transferring drive operatively interconnecting said transmission output shaft and said second means for transferring drive, selectively operable to transmit a first drive, a second drive (change-speeds) or no drive; a pair of longitudinally disposed drive shafts, one operatively interconnecting an output shaft of said second drive transferring means (45 or 54) and said input shaft of said first carrier, and the other one operatively interconnecting an output shaft of said second drive transferring means (56) and said input shaft of said second carrier; wherein said couplings of said shafts comprise gear couplings; and wherein said couplings of said drive shafts comprise gear couplings.

16. In reference to claim 24, Wohlfarth discloses a power plant (fig. 4) and driveline arrangement for a vehicle (fig. 4) having at least two wheel units and a body (fig. 4) supported on said wheel units, comprising:

17. a longitudinally aligned engine (24) supported on said body;

18. a transmission (30) supported on said body, disposed directly on the underside of said engine;

19. a first means (26) for transferring drive downwardly from an output shaft of said engine (24) to an input shaft of said transmission (32);

20. a second means (48) for transferring drive from an output shaft of said transmission (32) to forwardly and rearward projecting output shafts;

21. a first carrier (10) supported on said body forwardly of said second drive transferring means, having an input shaft (44 or 54) drivingly connected to said forwardly

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projecting shaft of said second drive transferring means and a pair of laterally projecting half shafts (14 or 16) operatively connected to a set of wheels of a wheel unit (56);

22. a second carrier (18 of 12) supported on said body rearward of said second drive transferring means, having an input shaft (56) drivingly coupled to said rearward projecting output shaft of said second drive transferring means;

23. and a pair of laterally projecting half shafts (18) operatively connected to a set of wheels of a wheel unit (18 of 12); and

24. a third carrier (20 of 12) supported on said body rearward of said second carrier, having an input shaft (58) drivingly coupled to an output shaft (32) of said second carrier, and pair of laterally projecting half shaft operatively connected to a set of wheels of a wheel unit (18 of 12).

25. In reference to claim 26, Wohlfarth further discloses a set of longitudinally disposed drive shafts (44 and 45 or 39, 54, 56, and 58), one operatively interconnecting an output shaft of said second drive transferring means (56) and said input shaft of said first carrier one (26), operatively interconnecting an output shaft of said second drive transferring means (56) and said input shaft of said second carrier and one operatively interconnecting an output shaft of said second carrier (56) and an input shaft of said third carrier (32).

26. In reference to claim 35, Wohlfarth discloses a power plant (fig. 4) and driveline arrangement for a vehicle (fig. 4) having at least two wheel units and a body (fig. 4) supported on said wheel units, comprising:

27. a longitudinally aligned engine (24) supported on said body;

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28. a transmission (30) supported on said body, disposed directly on the underside of said engine;

29. a first means (26) for transferring drive downwardly from an output shaft of said engine (39, 41, or 47) to an input shaft of said transmission (32);

30. a second means (48) for transferring drive from an output shaft of said transmission (32) to forwardly and rearward projecting output shafts;

31. a first carrier (second 10) supported on said body forwardly of said second drive transferring means, having an input shaft (45 or 54) drivingly connected to said forwardly projecting shaft of said second drive transferring means mid a pair of laterally projecting half shafts (16) operatively connected to the wheels of a wheel unit (56);

32. a second carrier (first 12) supported on said body rearward of said second drive transferring means, having an input shaft (32) drivingly coupled to said rearward projecting output shaft of said second drive transferring means, and a pair of laterally projecting half shafts (18) operatively connected to wheels of a wheel unit (56);

33. a third carrier (last 12) supported on said body rearward of said second carrier, having an input shaft (32) drivingly coupled to an output shaft of said second carrier (58) and a pair of laterally projecting half shafts (20) operatively connected to wheels of a wheel unit (rear12); and

34. a fourth carrier (forward 10) supported on said body forwardly of said first carrier, having an input shaft (44) drivingly coupled to an output shaft of said first carrier (45), and a pair of laterally projecting half shafts (14) operatively connected to wheels of a wheel unit (56).

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35. In reference to claim 36, Wohlfarth further discloses a third means (28) for transferring drive operatively interconnecting said transmission output shaft and said second means for transferring drive, selectively operable to transmit drive at a first speed, transmit drive at a second speed and transmit no drive in a neutral position (change-speed).

36. In reference to claim 46, Wohlfarth discloses a power plant (fig. 4) and driveline arrangement for a vehicle (fig. 4) having at least two wheel units and a body (fig. 4) supported on said wheel units comprising:

37. a longitudinally aligned engine (24) supported on said body;

38. a transmission (30) supported on said body, disposed directly on the underside of said engine;

39. a first means (26) for transferring drive downwardly from an output shaft of said engine (24) to an input shaft of said transmission (32); second means for transferring drive from an output shaft of said transmission (48) to forwardly and rearward projecting output shafts;

40. a first carrier (frontward 10) supported on said body forwardly of said second drive transferring means, having an input shaft (44) drivingly connected to said forwardly projecting shaft of said second drive transferring means and a pair of laterally projecting half shafts operatively connected to the wheel of a wheel unit (56);

41. a second carrier (rear 10) supported on said body rearward of said second drive transmitting means, having an input shaft (45 or 54) drivingly coupled to rearward projecting output shaft of said second drive transferring means, and a pair of laterally projecting half shafts (16) operatively connected to wheels of said wheel unit;

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42. a third carrier (first of 12) supported on said body rearward of said second carrier, having an input shaft (56) drivingly coupled to an output shaft of said second carrier (48) and a pair of laterally projecting half shafts (18) operatively connected to wheels of a wheel unit (56); and

43. a fourth carrier (last of 12) supported on said body rearward of said third carrier, having an input shaft (32) drivingly coupled to an output shaft of said third carrier (58) and a pair of laterally projecting half shafts (20) operatively connected to wheels of a wheel unit (56).

44. Claims 1 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawamoto et al. U.S. 2002/0096386 ("Kawamoto"). Kawamoto discloses a power plant [0004] and driveline arrangement for a vehicle [0004] having at least two wheel units and a body [0004] supported on said wheel units comprising:

45. a longitudinally aligned engine (3) supported on said body;

46. a transmission (13) supported on said body disposed directly on the underside of said engine;

47. a first means (29) for transferring drive downwardly from an output shaft of said engine (25) to an input shaft of said transmission (27);

48. a second means (17) for transferring drive from an output shaft of said transmission (63) to forwardly and rearward projecting output shafts;

49. a first wheel carrier (21) supported on said body forwardly of said second drive transferring means, having an input shaft (18) drivingly coupled to said forwardly projecting output shaft of said second drive transferring means, and a pair of laterally

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projecting half shafts (fig. 1) operatively connected to the wheels of a first wheel unit (21); and

50. a second wheel carrier (22) supported on said body rearward of said second drive transferring means, having an input shaft (19) drivingly coupled to said rearward projecting output shaft of said second drive transferring means, and a pair of laterally projecting half shafts (22a) operatively connected to the wheels of a second wheel unit (22).

51. In reference to claim 16, Kawamoto further discloses a selectively operable brake [0056] operatively connected to said second drive transferring means.

Claim Rejections - 35 USC § 103

52. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

53. Claims 1, 4, 11 – 13, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ima, U.S. 6,729,992 (“Ima”) in view of Wohlfarth. Ima discloses a power plant and driveline arrangement for a vehicle having at least two wheel units and a body supported on said wheel units comprising (column 1, line 22):

54. an engine (3) supported on said body;

55. a transmission (13) supported on said body disposed on the underside of said engine; a first means (7) for transferring drive from an output shaft (6) of said engine to an input shaft (5) of said transmission; a second means for transferring drive (15) from an output shaft (41) of said transmission to forwardly and rearward projecting output shafts;

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56. a first wheel carrier (4 or 16) supported on said body forwardly of said second drive transferring means, having an input shaft (17 or 41) drivingly coupled to said forwardly projecting output shaft of said second drive transferring means, and a pair of laterally projecting half shafts (8 or 25) operatively connected to the wheels of a first wheel unit; and

57. a second wheel carrier (the other of 4 or 16) supported on said body rearward of said second drive transferring means, having an input shaft (the other 17 or 41) of drivingly coupled to said rearward projecting output shaft of said second drive transferring means, and a pair of laterally projecting half shafts (the other of 8 or 25) operatively connected to the wheels of a second wheel unit.

58. Ima does not disclose the transmission disposed directly on the underside of the engine. Wohlfarth teaches a transmission (30) disposed directly on the underside of an engine (24). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to modify Ima such that it comprised the transmission disposed directly on the underside of the engine or the engine directly above the transmission so as to provide a compact driveline longitudinally for certain vehicle designs. When placed in combination, Ima in view of Wohlfarth further discloses the first means for transferring drive downwardly from the output shaft of the engine to the input shaft of the transmission.

59. In reference to claims 4, 11 – 13, 19, and 21, Ima in view of Wohlfarth further discloses a hydraulic system (fig. 10) for operating selected systems on said vehicle, having a motor (3) drivingly connected to said first drive transferring means; wherein said second drive transferring means is operable selectively to provide differential drive

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between said first and second carrier and to lock to evenly provide drive to said first and second carriers; wherein said second drive transferring means is operable to provide differential drive between said first and second carriers; wherein said second drive transferring means is operable to provide inter-axle differential drive; a selectively operable brake (22) operatively connected to said second drive transferring means; wherein each of said carriers is provided with an inter-wheel differential (99); a pair of disc brake assemblies (fig. 6) mounted on each of said carriers, and wherein each of said assemblies is operatively connected to a half shaft (fig. 8).

60. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wohlfarth in view of Evans et al. U.S. 2003/0186768 ("Evans"). Wohlfarth does not directly disclose the details of the engine used. Evans teaches a diesel engine (6). Evans further teaches a turbine engine (244). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to modify Wohlfarth such that it comprised the engine in view of the teachings of Evans so as to provide an internal combustion power plant that is powerful enough to drive large or work vehicles that uses multiple driven axles [0045].

61. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wohlfarth in view of Gradu, U.S. 2003/0144109 ("Gradu"). Wohlfarth does not directly disclose the transferring means operative to proportion transmitted torque. Gradu teaches a drive transferring means (8) is operative to proportion transmitted torque, 30% to a first carrier and 70% to a second carrier (fig. 5). It would have obvious for a person having ordinary

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skill in the art at the time the invention was made to modify Wohlfarth such that it comprised the drive transferring means operative to proportion transmitted torque in view of the teachings of Gradu so as to selectively apportion torque to front driving wheels and rear driving wheels that can be varied and controlled as needed.

62. Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wohlfarth in view of Clark, U.S. 3,471,166 ("Clark"). Wohlfarth discloses a power plant (fig. 4) and driveline arrangement for a vehicle (fig. 4) having at least two wheel units and a body (fig. 4) supported on said wheel units comprising:

63. a longitudinally aligned engine (24) supported on said body;

64. a transmission (30) supported on said body, disposed directly on the underside of said engine;

65. a first means (26) for transferring drive downwardly from an output shaft of said engine (24) to an input shaft of said transmission (32); second means for transferring drive from an output shaft of said transmission (48) to forwardly and rearward projecting output shafts;

66. a first carrier (frontward 10) supported on said body forwardly of said second drive transferring means, having an input shaft (44) drivingly connected to said forwardly projecting shaft of said second drive transferring means and a pair of laterally projecting half shafts operatively connected to the wheel of a wheel unit (56);

67. a second carrier (rear 10) supported on said body rearward of said second drive transmitting means, having an input shaft (45 or 54) drivingly coupled to rearward

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projecting output shaft of said second drive transferring means, and a pair of laterally projecting half shafts (16) operatively connected to wheels of said wheel unit;

68. a third carrier (first of 12) supported on said body rearward of said second carrier, having an input shaft (56) drivingly coupled to an output shaft of said second carrier (48) and a pair of laterally projecting half shafts (18) operatively connected to wheels of a wheel unit (56); and

69. a fourth carrier (last of 12) supported on said body rearward of said third carrier, having an input shaft (32) drivingly coupled to an output shaft of said third carrier (58) and a pair of laterally projecting half shafts (20) operatively connected to wheels of a wheel unit (56).

70. Wohlfarth does not disclose a fifth wheel carrier. Clark further teaches a fifth carrier (39) supported on said body rearward of a third carrier (37 or 41) having an input shaft (55) driving coupled to an output shaft (50) of said third carrier and a pair of laterally projecting half shafts (38). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to modify Wohlfarth such that it comprised a fifth carrier in view of the teachings of Clark so as to provide free movement of all the wheels without strain, for equal driving torque, for a greater distribution of load, and greater load capacity.

71. In reference to claim 48, Wohlfarth further discloses a third drive transferring means (28) operatively interconnecting said transmission output shaft and said second means for transferring drive, selectively operable to transmit drive at a first speed, transmit drive at a second speed and transmit no drive in a neutral position (change-speed).

Response to Arguments

72. Applicant's arguments with respect to claims 1, 24, 35, 46, and 47 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAREN JANE J. AMORES whose telephone number is (571)272-6212. The examiner can normally be reached on Monday through Friday, 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571)-272-7742. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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KAREN J AMORES
Examiner
Art Unit 3616

/K. J. A./
Examiner, Art Unit 3616
/Ruth Ilan/
Primary Examiner, Art Unit 3616